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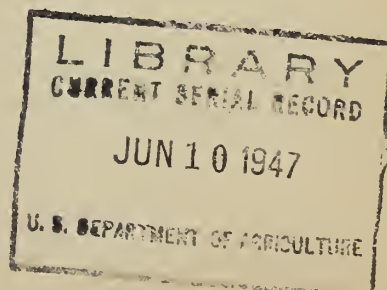
AERIAL SPRAYING WITH DDT PROMISES
CONTROL OF COSTLY FOREST INSECT PEST

Aerial spraying with DDT may save large areas of valuable timber in the Northeast from destruction by the spruce budworm. This leaf-eating insect already has ruined many millions of acres of spruce-fir stands in Ontario and Quebec. It has been on the increase in New York and Maine for the last few years. The present shortage of newsprint paper in North America is due in part to the current budworm outbreak in Canada and future supplies are seriously threatened.

Previous outbreaks of this insect have run their course unchecked because there were no practical means for stopping them. Most of the infested areas were inaccessible for spraying or dusting equipment and treating by airplanes with the older insecticides was too expensive. Tests made in the past three years, however, have shown that DDT applied from the air will kill budworms and may be developed as a practical means for controlling spruce budworm epidemics. But they have shown also that many problems relating to type of spray mixture and distributing apparatus must be solved before large-scale control operations can be undertaken.

To find the answers to these problems the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, on July 1, 1946, set up a laboratory at the Agricultural Research Center, Beltsville, Maryland. The results of studies made there and at the Department's Agricultural Engineering Laboratory at Toledo, Ohio, will be further checked under field conditions this summer in northern New York, with the help of State agencies and timber owners. J. S. Yuill, U. S. Department of Agriculture entomologist in charge of the project, hopes that these tests will point the way to the development of effective and economical control measures for commercial use.

The studies by Department entomologists and engineers at Beltsville are being directed to a determination of (1) the proper physical properties of DDT in various combinations and concentrations; (2) the best type of atomizing device to be installed in a plane; (3) the effect of different flight procedures on the distribution of the insecticide; and (4) the effect of different spray deposits on insects.



A specially equipped N3N biplane has made 157 spraying test flights over an area set aside for the purpose at the Beltsville airfield. Of the several types of atomizing devices used in these tests, hollow-cone type nozzles mounted on a boom beneath the lower wing proved superior in giving a wide and uniform spray swath. The tests, with this light plane, showed further that neither a change in the altitude of the flight between 50 and 200 feet, nor an increase in the spray output above 18 gallons a minute had an appreciable effect on the width of the swath in which the spray was deposited. Most of the tests were made in upwind flights. Initial trials indicated that crosswind flights may give a wider and more uniform spray distribution, but further tests are necessary to determine how consistent these results may be.

The accompanying pictures show how the aerial test spraying flights were made and the results evaluated.
